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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/699,035	10/27/2000	John Michael Pinneo	P1-005	6770

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EXAMINER

RIVELL, JOHN A

ART UNIT PAPER NUMBER

3753

DATE MAILED: 07/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/699,035

Applicant(s)

PINNEO, JOHN MICHAEL

Examiner

John Rivell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/17/04 (amendment).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-20 and 27-39 is/are pending in the application.
- 4a) Of the above claim(s) 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-20, 27, 28, 30, 31, 33, 34 and 36-39 is/are rejected.
- 7) ☒ Claim(s) 29 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

The sheet of drawings containing figures 2A-2F, October 27, 2000 is acceptable. The sheet of drawings containing the corrections to figures 3A and 3B, received on October 21, 2002 is acceptable. The sheet of drawings containing the correction to figure 1, received on October 27, 2003 is not acceptable because the allowable corrected phrase "Prior Art" in that figure is not clear and well defined. In order to avoid abandonment of this application, correction is required in reply to the Office action. The correction will not be held in abeyance.

A thorough review of the prosecution of this application reveals that claims 1-16 and 22-26 have been canceled. Claims 17-20 and 27-39 remain pending. There is no claim numbered 21. This is an error in claim numbering that can be traced back to the response of March 20, 2002 in which added claims ending as claim number 20 and the response of October 21, 2002 in which new claims were added beginning with a claim numbered 22.

The prosecution review also reveals apparent confusion relating to examination of species claims now present.

The first Office action dated July 6, 2001 proffered a combined restriction of invention/election of species requirement because, at that time, there were claims directed to an apparatus and an independent and distinct method of manufacture. The election of species requirement, at that time, was directed to the method claims specifically because, at that time, there were method of manufacturing claims that were considered generic, method of manufacturing claims directed specifically to the species

illustrated in figures 2A-2F (2F) and method of manufacturing claims directed specifically to the species illustrated in figures 3A and 3B (3A).

In response, applicant elected the apparatus claims, i.e. claims 1-6, and canceled claims 7-16, the remaining pending claims at that time.

An action on the merits of the elected apparatus claims was mailed on August 1, 2001. That action examined claims that, at that time, were generic (e.g. claims 1, 3 and 5) as well as claims directed specifically to the species illustrated in fig 3A (e.g. claims 2, 4 and 6, the recitation in each claim of "multiple diamond elements"). Because there were no claims specific to the species illustrated in fig. 2F, an election of species was not proffered. Since applicant has received an action on the merits for the originally presented invention, i.e. the species of fig. 3A specifically, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, any new claim directed specifically to any disclosed species other than that of fig. 3A, which is not a generic claim, such as current claim 32, is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Of the claims currently pending, claim 32 is not readable on the constructively elected species because claim 32 recites that "said plenum is entirely comprised of diamond." The species of fig. 2F is the only disclosed species in which "said plenum is entirely comprised of diamond."

Accordingly, an action on the merits of claims 17-20, 27-31 and 33-39 is as follows.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 17-20, 27, 28, 30, 31, 33, 34, and 36-39 are rejected under 35 U.S.C. §102 (b) as being anticipated by Larson et al. (U.S. Pat. No. 5,4585,671)

The patent to Larson et al., in figs. 2 and 6, discloses “a heat pipe (at bag 22) having a diamond wall (34, see column 8, lines 30-33) through which at least a portion of heat flowing into (as is the case here) or out of the heat pipe passes” as recited in claim 17.

Regarding claim 18, Larson et al., in figs. 2 and 6, discloses “a heat pipe (at bag 22) having a diamond wall (34) through which at least a portion of heat flowing into (as is the case here) or out of the heat pipe passes, wherein the heat sources (12) are electronic devices” as recited.

Regarding claim 19, Larson et al. discloses in figs. 2 and 6 “a heat pipe (at bag 22) having a diamond wall (34) through which at least a portion of heat flowing into (as is the case here) or out of the heat pipe passes, the principal function of the heat pipe being to improve thermal uniformity within the heat source (12)” as recited.

Regarding claim 20, Larson et al. discloses in figs. 2 and 6, “a heat pipe (at bag 22) having a diamond wall (34) through which at least a portion of heat flowing into (as is the case here) or out of the heat pipe passes, the principal function of the heat pipe

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being to improve thermal uniformity within and among the heat sources (12)" as recited.

Note column 8, lines 17-19 for disclosure of plural "chips" 12 mounted on plate 34.

Regarding claim 27, Larson et al. discloses in fig. 6 "a heat pipe (at bag 22) comprising: a plenum (22) having a vaporization region (lower end) coupled to a condensation region (upper end) through a center section; a diamond wall (34) defined in at least one of said vaporization region and said condensation region (here in "said vaporization region); a capillary mass (wick 60) configured for fluid flow disposed in said plenum (22) between said vaporization region (lower) and said condensation region (upper); and a cooling fluid (31) disposed in said plenum (22) said cooling fluid (31) having a liquid phase (upon condensing) and a vapor phase (upon boiling) within said plenum (22)" as recited.

Regarding claim 28, in Larson et al., "said diamond wall (34) is configured to transfer thermal energy to said cooling fluid (31) in said vaporization region (lower end)" as recited.

Regarding claim 30, in Larson et al., "said diamond wall (34) is configured to be mountable to said plenum (22)" as recited.

Regarding claim 31, in Larson et al., "said diamond wall (34) is configured to provide lateral heat spreading of hot spots" within the heat source 12 as recited.

Regarding claim 33, in Larson et al., "said diamond wall (34) is a solid slab of diamond" as recited.

Regarding claim 34, in Larson et al., "said diamond wall (34) is a portion of said plenum (22)" as recited.

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Regarding claim 36, in Larson et al., "said plenum (22) defines an interior and an exterior, said diamond wall (34) configured to contact with said interior and said exterior" as recited.

Regarding claim 37, in Larson et al., "said diamond wall (34) defines an interior portion and an exterior portion opposite said interior portion, said interior portion configured to contact with said cooling fluid (31)" as recited.

Regarding claim 38, in Larson et al., "said diamond wall (34) defines an interior portion and an exterior portion opposite said interior portion, said exterior portion configured to contact at least one of a heat source (heat source 12) and a cooled heat sink" as recited.

Regarding claim 39, in Larson et al., "said diamond wall (34) defines an interior portion and an exterior portion opposite said interior portion, said interior portion configured to contact with said cooling fluid (31) and said exterior portion configured to contact at least one of a heat source (heat source 12) and a heat sink" as recited.

Claims 29 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding applicants remarks as they may apply, the allegation that the independent claims are allowable over the references of record, absent supporting evidence as to why the individual elements recited in the claims do not find their equivalents in the reference of Larson et al., as noted above, is unpersuasive.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

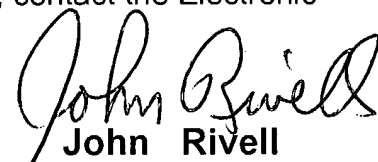
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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Rivell whose telephone number is (703) 308-2599. The examiner can normally be reached on Mon.-Thur. from 6:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on (703) 308-1272. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John Rivell
Primary Examiner
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j.r.